REMARKS/ARGUMENTS

In the specification, paragraphs [0056], [0079], [0082] and [0089] have been amended to correct minor editorial problems.

Claims 1 and 12-14 remain in this application. Claims 1 and 12-14 are amended. Claims 2-11 and 15-20 have been canceled. Claims 21-36 are new.

The Examiner rejected claims 1-9, 11, 13 and 15-20 under 35 U.S.C. 102 as being anticipated by Adams et al. The remaining claims 10, 12 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Adams et al. in view of Williams, Jr.

To illuminate the claimed differences between the subject invention and the cited prior art, a brief look at the teaching of the principally relied upon prior art references is in order.

Williams is in a non-analogous art for headrests for workers, belayers or physically impaired persons. Williams was relied upon to teach straps positioned between the legs, encircling the legs, and near the waist of a user in order to secure a member along the user's back.

Adams et al. discloses to two vastly independent restraint systems that are used to maintain the pilot in position. One is a conventional aircraft seat belt assembly that secures the pilot's body (but not the head) to the aircraft seat in order to maintain the pilot's body in position during flight. The other is an ejection seat insert which lifts a pilot's head against compressive forces during high G acceleration events, such as those forces that occur during ejection from an aircraft.

In Adams, the seat belt assembly does not serve as an anchor to control the pilot's head. Instead, in the embodiment(s) illustrated in FIGS. 1-9, the ejection seat insert itself anchors the pilot's head.

To serves as the anchor, the ejection seat insert includes back members (support member 24, back plate 26, lumbar back plate 30) and a seat pan base assembly 36 affixed to back members. A restraint cord 25 is attached at the top end of the head support member 24 and at a bottom end to a housing (80) having an inertia reel (81) that is contiguous with the support wedge 42, 42a of the insert. Col. 6, lines (34-39) (kindly note that on line 39 "FIG. 2" should read as "FIG. 5"). During high G acceleration, the slack in the restraint cord 25 is first used up and then compressive forces along the pilot's spine are transferred to the seat pan assembly 36 of the injection seat insert 22. Col. 7, lines 22-23; 42-45. Accordingly, Adams teaches to utilize the ejection seat insert (and not the seat belt assembly or the pilot's body) as an anchor to offset compression forces during high G acceleration.

The Adams' ejection seat insert is part of the aircraft seat in that it is not carried on the pilot during normal ingress and egress of the aircraft. Upon entering the cockpit, the pilot first sits onto the already installed ejection seat insert, then attaches various belts to secure him to the aircraft seat and other belts to secure him to the ejection seat insert. Col. 7, lines 11-21. It also appears that the helmet is pre-attached to the ejection seat insert or otherwise the pilot may need assistance in attaching or removing the helmet from the ejection seat insert.

As such, the pilot must be fully unclipped from both the aircraft seat and from the ejection seat insert before being able to exit the aircraft under normal operating conditions. Disadvantageously, the pilot cannot exit the aircraft by simply unclipping a cam lock or unlatching the aircraft lap belt. As a further disadvantage, if such an injection seat insert were used in an automotive context, in the event that the driver

escaped from a wrecked vehicle, the injection seat insert would remain within the vehicle where it may be destroyed or damaged, for example by fire.

Adams discloses another embodiment as illustrated by FIG. 10. This embodiment is similar to that discussed above, except that rigid receptors 106 are affixed directly to the seat structure 108, instead of utilizing a seat pan base assembly. Col. 8, lines 12-16. And, the restraint cord 112 is attached rearward to the aircraft seat. Col. 8, lines 19-21. Accordingly, the injection seat insert is anchored to the seat by the rigid receptors 106 and by the restraint cord 112. As with the previously described embodiment, neither the seat belt assembly nor the pilot's body serve as the anchor to the injection seat insert.

Moreover, as the injection seat insert is affixed to the seat at the rigid receptors 106 and to the seat by the restraint cord 112, egress from the aircraft is time consuming. That is, unclipping the aircraft lap belt does not release the ejection seat insert or the pilot from the aircraft. To remove the pilot from the aircraft, the pilot must be fully released from both the aircraft seat belt assembly and from the injection seat insert.

Now referring to the present invention, the present invention is a restraint device principally for use in automobile racing. The restraint device has utility for resisting tension forces in a driver's neck that may occur during high deceleration events, such as those that may occur during a frontal collision. That is, the restraint device controls forward movement and downward rotation of a driver's head during a frontal collision.

To achieve this purpose, and as set forth in each claim, the restraint device anchors by the vehicle's seat belt assembly and/or to the driver's body in order to resist tension forces and thereby control the driver's head during a collision. Moreover, the restraint device is configured for quick release from the vehicle to allow for quick egress by the driver.

Now referring to the claims in particular:

Independent claims 1 and 34 require that the restraint device attach to a vehicle seat belt assembly wherein the seat belt assembly anchors the driver's head in order to control movement of the driver's head during a vehicle collision.

As discussed in detail above, Adams does not teach attaching the restraint device to a vehicle seat belt assembly in such as manner that the seat belt assembly anchors the driver's head during a vehicle collision. Instead, Adams discloses an ejection seat insert having back members (support member 24, back plate 26, lumbar back plate 30) attached to a seat pan base assembly 36 by a hinge and a cord 25, wherein the seat pan base assembly 36 serves as an anchor (embodiment illustrated by FIGS. 1-9). Alternatively, Adams discloses anchoring the injection seat insert to the aircraft seat (embodiment illustrated by FIG. 10).

As the claimed anchoring is undisclosed by the prior art, it is believed that claims 1 and 34 are novel and non-obvious over Adams and the remaining references, in singular or in combination. Additionally, as claims 12-14 and 35-36 depend from either claim 1 or claim 34, it is believed that these claims are allowable as well.

Regarding the dependent claims in greater detail, claims 12-14 further limit independent claim 1 by setting forth specific strap placements for attaching the restraint device to the seatbelt assembly. The locations of the straps are important as they determine force pathways between the driver's head the seat belt assembly which anchors the driver's head. As none of the cited prior art, in singular or in combination, disclose restraining the driver's head by anchoring the restraint device to the seat belt assembly, the claimed strap positions are believed novel and non-obvious.

Dependent claims 21, 23, 25 and 35-36 add limitations regarding the part of the seat belt assembly to which the restraint device is attached. Again, as none of the cited prior art, in singular or in combination, disclose restraining the driver's head by

anchoring the restraint device to the seat belt assembly, the portions of the seat belt assembly to which the restraint device is attached are believed novel and non-obvious.

Dependent claims 22, 24, 26 and 35-36 add limitations regarding how the driver is simply uncoupled from the vehicle for quick egress there-from by releasing the cam lock, lap belt, or shoulder belt. Quick egress from a vehicle is particularly important in the vehicle racing industry in order to escape from fire or other hazards. Claim 27 further clarifies an advantage of the present invention by setting forth the limitation that the driver does not need to disengage from the restraint device in order to exit the vehicle. Hence, the restraint device is carried on the driver as the driver escapes from the vehicle where-upon and restraint device will be less likely to be subjected to further damage.

In contrast, in Adams the pilot is not freed from being secured to the aircraft by any of means claimed. As discussed in detailed above, the pilot must disengage multiple buckles in order to detach himself from both the aircraft seat and the ejection seat insert before being able to exit the aircraft. Moreover, the ejection seat remains in the vehicle where it could be subject to damage.

Independent claim 28, and claims 29-33 which depend there-from, require the limitation of a strap that is attached to the rigid member and attached to the driver's body wherein the driver's body anchors the driver's head to control movement of the driver's head during a vehicle collision.

Applicant agrees that Adams discloses a seat belt assembly that has straps that secure to a pilot's body, but it does not control the driver's head. And, Adams discloses an ejection seat insert that restrains the pilot's head, but it anchors to the ejection seat insert (embodiment illustrated by FIGS. 1-9) or to the aircraft seat (embodiment illustrated by FIG. 10). As such, Adams does not disclose a strap attached to the pilot's body wherein the body anchors the pilot's head.

The other cited prior art offers no assistance to Adams in this regards since: 1) there is no motivation to add additional straps between the ejection seat insert and the driver's body because Adams achieves control of the pilot's head in an unrelated manner by anchoring to the ejection seat insert or to the aircraft seat; and 2) Adams currently has straps around the pilot's legs 18 and upper torso 16 which do not allow for the pilot's body to serve as an anchor for maintaining position of the pilot's head. As such, adding the leg straps of Williams Jr. to the ejection seat insert of Adams merely duplicates the straps currently disclosed by Adams without achieving anchoring as claimed by Applicant.

For the above stated reasons, Applicant believes that independent claim 28 is novel and non-obvious over the prior art, applied singularly or in combination. And, as claims 29-33 depend there-from, it is believed that these claims are also patentable.

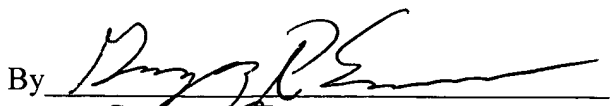
The remaining cited prior art references have been reviewed but are no more relevant than the relied upon references.

As this Amendment is timely filed and includes no more claims than previously paid for, no additional fees are owed.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

MILLER, EVERMAN & BERNARD, PLLC

By 

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